2002 Utah Seat Belt Tracking Telephone Surveys: Buckled or Busted

METHODOLOGY

Assessments in November and December 2002

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Overview

The Utah Highway Safety Office and US DOT National Highway Traffic Safety Administration (NHTSA) commissioned a national survey research organization, Schulman, Ronca and Bucuvalas, Inc. (SRBI) to conduct the 2002 Seat Belt Tracking Telephone Surveys as part of an evaluation effort of the November 2002 seat belt mobilization campaign: Buckled or Busted.

The 2002 Seat Belt Telephone Survey was conducted among a statewide sample of adults in Cache, Davis, Salt Lake, Utah, Washington, and Weber counties, Utah. Statewide samples of 500 interviews per wave were conducted. The 2002 Seat Belt Tracking Telephone Survey was conducted as a pre/post evaluation, before and after the intervention efforts conducted in November 2002. The baseline survey was conducted between November 6 and November 17, 2002, in order to assess community knowledge, attitudes and reported behavior related to seat belt usage immediately prior to the mobilization. The mobilization campaign was conducted between November 18 and December 1. All of the Seat Belt Tracking Telephone Surveys were completed in Utah before the Media and Enforcement efforts were begun. A chart of the mobilization efforts is provided in Figure 1.

The 2nd wave of interviewing was conducted from December 4 to December 15, 2002, in order to assess community knowledge, attitudes and reported behavior related to seat belt usage immediately after the mobilization.

FIGURE 1
SEAT BELT MOBILIZATION EFFORTS

Utah	Begins	Ends
Wave 1 interviews (n=500)	November 6, 2002	November 17, 2002
Bus board Campaigns Begin	November 15, 2002	December 15,2002
Radio campaign Begins	November 19, 2002	December 3,2002
Enforcement Begins	November 18, 2002	December 1,2002
Wave 2 interviews (n=500)	December 4, 2000	December 15, 2002

The sampling area to be covered by the survey was geographically defined as 6 counties in the State of Utah: Cache, Davis, Salt Lake, Utah, Washington, and Weber counties. Within the geographically defined boundaries of the sample, a series of replicate simple random samples of working residential telephone banks was drawn. Two digits were randomly generated and appended to the residential bank number to produce a full ten random digit telephone number.

The random digit sample was loaded by replicate into a sample management system. These numbers were then systematically dialed by telephone interviewers located in SRBI's central telephone interviewing facilities. Since each wave had to be completed in approximately two weeks, the interviewing protocol called for a total of five contact attempts at sampled numbers to determine whether a household had been reached. Contact attempts were made during the hours that persons are most likely to be home – from 5:30 p.m. to 9: 30 p.m. on weekdays and from 10:00 a.m. to 9:30 p.m. on weekends. If no contact had been made after five attempts, the number was dropped.

If contact was made with an eligible household, one adult was selected as the designated respondent for the survey using the most recent birthday screen. If the designated respondent was not available to conduct the interview, additional attempts were made to reach and interview the designated respondent. Attempts were made to convert initial refusals beginning 25 hours after the refusal. The sampling and interviewing procedures were identical for all samples in the survey.

At the completion of the survey, the completed interviews for each geographically defined sample were weighted to correct for selection biases. Households with multiple telephone lines were down-weighted to correct for the between household likelihood of selection. Cases were weighted proportionate to the number of adults in the household to correct for the within household likelihood of selection. The weighted sample was then compared to current Census estimates of the distribution of the adult population by age and gender within the geographically defined sample. Age/gender differences between the expected and observed distribution of the achieved sample were corrected by sample weighting. A final sample weight was applied to correct the weighted sample size to the unweighted sample size for each sample.

A combined data set of the baseline and follow-up surveys was prepared. Cross-tabulations of all questionnaire items were run for the weighted sample. These banner tables were made available in electronic format to state officials, and other research and program collaborators.

A top-line report on the telephone survey findings was prepared. The baseline and follow-up survey responses were presented in Microsoft Power Point presentation graphics.

Sample Design

Because the surveys were conducted by telephone, the study procedures called for the construction of a geographically defined sampling frame of telephone households from which an unbiased population sample could be derived. A probability sample of Cache, Davis, Salt Lake, Utah, Washington, and Weber counties was constructed for Utah. The purpose of this state survey was to test the effects of intensive media exposure and enforcement efforts urging drivers to use their seat belts, and to test for saturation of the campaign slogan, Buckled or Busted.

The procedure for developing a population-based sample for each of these surveys involved the same steps. The first stage sample involved a population-based sample allocation, distributed in proportion to the geographic distribution of the target population according to the most recent Census estimates. The second stage employed a systematic selection of assigned telephone banks within the geographically stratified first stage sample design. The third stage in the sampling procedure was to conduct a random digit dialing (RDD) sampling of telephone households within the telephone banks selected in the second stage. The fourth stage required the identification and selection of one eligible respondent within each sampled household so that the household sampling frame yielded a population sample of the eligible population.

Sample Construction

Most of the statistical formulas associated with sampling theories are based upon the assumption of simple random sampling. Specifically, the statistical formulas for specifying the sampling precision (estimates of sampling variance), given particular sample sizes, are premised on simple random sampling. Unfortunately, random sampling requires that all of the elements in the population have an equal chance of being selected. Since no enumeration of the total population of any state is available, all surveys of the general public are based upon an approximation of the actual population and survey samples are generated by a process closely resembling true random sampling.

The samples were based on a modified stratified random digit dialing method, using an area probability/RDD sample rather than a single-stage/RDD sample. There are several important advantages to using an area probability base: (1) it draws the sample proportionate to the geographic distribution of the target population rather than the geographic distribution of telephone households, which is vital to constructing unbiased population estimates from telephone surveys; (2) it allows greater geographic stratification of the sample to control for

known geographic differences in non-response rates; and (3) it facilitates the use of Census estimates of population characteristics to weight the completed sample to correct for other forms of sampling bias.

The initial stage of the sample construction process required the development of an area probability sample based upon the distribution of the target population for this study, i.e., the non-institutionalized population age 16 and older of Utah (Cache, Davis, Salt Lake, Utah, Washington, and Weber counties).

A sample of assigned telephone banks was randomly selected from an enumeration of the Working Residential Hundreds Blocks of the active telephone exchanges within the region. The Working Hundreds Blocks were defined as each block of 100 potential telephone numbers within an exchange that included 3 or more residential listings. (Exchanges with one or two listings were excluded because in most cases such listings represent errors in the published listings.) This second stage sampling frame included more than 96.5% of all Utah telephone households.

In the third stage sample, a two-digit number was randomly generated by computer for each Working Residential Hundreds Block selected in the second stage sample. This third stage sampling process is the random digit dialing (RDD) component. Every telephone number within the Hundreds Block has an equal probability of selection, regardless of whether it is listed or unlisted.

The third stage RDD sample of telephone numbers was then dialed by SRBI interviewers to determine which were currently working residential household phone numbers. Non-working numbers and non-residential numbers were immediately replaced by other RDD numbers selected within the same stratum in the same fashion as the initial number. Ineligible households (e.g., no adult in the household, language barriers other than Spanish) were also immediately replaced. Non-answering numbers were not replaced until the research protocol (in this study, a five call protocol) was exceeded. However, one or more open numbers per case were permitted in order to permit the survey to be completed within a reasonable period.

FIGURE 2
UTAH CENSUS POPULATION AGE 16+

9767 DOT SEAT BELT SURVEY –
Population projections for 2002
Utah cross-sample
Second Stage Sample Weights (after correcting for selection factors)
Source: Population Projections Program –2002, Population Division, U.S. Census Bureau, Washington, D.C. 20233 (301) 457-2397
Internet Release Date: January 13, 2000
Last Revised Date: January 19, 2001

NOV
UTAH

N=500	Men			Women		
	N	%	Projected	N	%	Projected
16-24	202866	12.29%	61	196007	11.88%	59
25-34	154340	9.35%	47	159066	9.64%	48
35-44	148836	9.02%	45	147800	8.96%	45
45-54	128831	7.81%	39	130345	7.90%	39
55-64	81919	4.96%	25	85584	5.19%	26
65+	95231	5.77%	29	119274	7.23%	36
Total	812023	49.21%	246	838076	50.79%	254

Selection of Respondent within Household

The multi-stage sampling process described in the previous section yielded an unbiased sample of households with telephones, drawn proportionate to the population distribution, within the geographic scope of the sample (nation, region or state). The final stage required the selection of one respondent per household for the interview.

A systematic selection procedure was used to select one designated respondent for each household sampled. The "most recent/next birthday method" was used for within household selection among multiple eligibles. The Within Household Selection Procedure is presented in Figure 3. The CATI system alternated the "most recent" and "next" birthday specification for the selected respondent to avoid a temporal bias for birthdays before (or after) the field period.

FIGURE 3
WITHIN HOUSEHOLD SELECTION PROCEDURE:
Adult Cross-Section

TIME START: _____________ TIME END: _____________
DATE: _____________ BATCH #:____________ CATI RESP. #: ______________
SAMPLE POINT #: ___ ___ ___
RESP PHONE NUMBER: ____
- -

INTRODUCTION TO BE ADMINISTERED TO ANY ADULT HOUSEHOLD MEMBER:

Hello, I'm __________________ calling on behalf of the Utah Highway Safety Office. We are conducting a study of Americans' driving habits and attitudes. The interview is voluntary and completely confidential. It only takes about 10 minutes to complete.

C1. In order to select just one person to interview, could I speak to the person in your household, age 16 and older, who has had the most recent/next birthday?

Respondent is that person [CONTINUE WITH CATI AND ENTER Q.1 AS C1]...................1
Other respondent came to phone [CONTINUE WITH CATI AND ENTER Q.1 AS C1]...........2

Respondent is not available:

[ARRANGE CALLBACK AND RECORD IT, ALONG WITH THE RESPONDENT'S FIRST NAME OR HH POSITION, ON THE SAMPLE SHEET. ATTACH THIS SHEET TO SAMPLE AFTER FILLING OUT APPLICABLE RESPONDENT INFO AT THE TOP. WHEN THE NEXT INTERVIEWER REACHES THIS PERSON, THEY WILL ENTER Q.1 AS C1].................3

Initial Contact

Initial telephone contact was attempted during the hours of the day and days of the week that have the greatest probability of respondent contact. The primary interviewing period was from 5:30 p.m. to 9:30 p.m. on weekdays, from 9:00 a.m. to 9:30 p.m. on Saturdays, and from 10:00 a.m. to 9:30 p.m. on Sundays (all times are local time).

If the interview was not conducted at the time of initial contact, the interview was rescheduled at a time convenient to the respondent. Although initial contact attempts were made on evenings and weekends, daytime interviews were scheduled when necessary. If four telephone contacts on the night and weekend shifts did not elicit a respondent contact, the fifth contact was attempted on a weekday.

Interviewers attempted a minimum of five calls to each telephone number. When the household was reached, the interviewer asked to speak to an adult to screen the household for eligibility and to determine the designated respondent. When the designated respondent was reached but an interview at that time was inconvenient or inappropriate, interviewers set up appointments with respondents. When contact was made with the household, but not the designated respondent(s), interviewers probed for appropriate callback times and attempted to set up an appointment.

Refusal Conversion

The process of converting terminations and refusals, once they had occurred, involved the following steps. First, there was a diagnostic period, when refusals and terminates were reported on a daily basis and the Project Director and Operations Manager reviewed them after each shift to see if anything unusual was occurring. Second, the Project Director and his staff developed a refusal conversion script. Third, the refusal conversion effort was fielded with re-interview attempts scheduled two to three days after the initial refusal. Finally, the Project Director and Operations Manager received the outcomes of the refusal conversion efforts on a daily basis.

Field Outcomes

Status of cases as of the end of the field period are reported using the categories defined in Figure 4.

FIGURE 4
SAMPLE DISPOSITION CATEGORIES

NIS/Disconnected Incomplete/Line Prob	The number was not in service, had been disconnected, or yielded a recording indicating that it was no longer an active number
Business/Gov't/ Non-residential	The number yielded a contact with a business, government agency, pay telephone, or other non-residential unit
Fax/Modem	The number yielded an electronic tone indicating a fax machine or data line
Dialer - NIS/DIS/bad #	Automated dialer used to pre-screen numbers that are no longer in service or disconnected prior to that number being included in the sample
No answer	The number rang, but no one answered
Busy	A busy signal was encountered
Answering machine	An answering machine was reached at the telephone number
Language	The interview could not be completed because of language barriers
Health/hearing prob	The interview could not be completed because designated respondent was in poor health or unable to hear
Away for duration	The designated respondent was out of the area for the entire field period
Callback	Contact was made with the household, but not necessarily the designated respondent. By the end of the field period, the case had neither yielded a refusal or completed interview
Callback to complete	The interview was interrupted, but not terminated. The field period ended before the full interview could be completed
Refusal -- Initial	Someone in the household refused to participate in the study
Refusal – 2nd/Hard	During a refusal conversion attempt, a hard or second refusal to participate in the study was encountered
Quota Out	An interview was not completed because the quota for gender or state had already been met in this area
Terminate/Abandoned	A respondent began the interview but refused to finish
Complete	An interview was completed with the designated respondent

Using the codes presented in Figure 4 above, the disposition for the **Utah Cross Section of Wave 1** (November 2002), as presented in Figure 5, would be interpreted as follows:

- A total of 4,038 randomly selected telephone numbers were sampled;
- 56% of the numbers were not active residential phone numbers, including 44% not-in-service, 6% business or non-residential, and 6% computer or fax tones;
- 5% of the numbers were ring no answer or busy on their last attempt ;
- 4% were answering machines;
- 1% were households in which the designated respondent was not interviewable (away for an extended period, incapacitated, or deaf).

At the close of the field period 699 cases (about 18%) were in callback status.

The participation rate represents one of the most critical measures of potential sample bias because it indicates the degree of self-selection by potential respondents into or out of the survey. The participation rate is calculated as the number of completed interviews (including respondents who screen out as ineligible and those who quota-out for gender – set at 52% female and 48% male) divided by the combined total number of completed interviews, terminated interviews, and refusals to interview. (The inclusion of screen-outs in the numerator and denominator is mathematically equivalent to discounting the refusals by the estimated rate of non-eligibility among refusals.) The participation rate in Figure 5 is based on the following elements:

- 500 completed interviews;
- 1 case not interviewed because the gender quota had been met;
- 200 refusals to be interviewed (including 50 second refusals).

Based on the standard calculations of participation rate, the participation rate for Wave 1 (November 2002) was 71.5%.

The disposition for the **Utah Cross Section of Wave 2** (December 2002), as presented in Figure 5, would be interpreted as follows:

- A total of 3,379 randomly selected telephone numbers were sampled;
- 57% of the numbers were not active residential phone numbers, including 44% not-in-service, 6% business or non-residential, and 6% computer or fax tones;
- 3% of the numbers were ring no answer or busy on their last attempt ;
- 4% were answering machines;
- Less than 1% were households in which the designated respondent was not interviewable (away for an extended period, incapacitated, or deaf).

At the close of the field period 492 cases (about 15%) were in callback status.

The participation rate represents one of the most critical measures of potential sample bias because it indicates the degree of self-selection by potential respondents into or out of the survey. The participation rate is calculated as the number of completed interviews (including respondents who screen out as ineligible and those who quota-out for gender – set at 52% female and 48% male) divided by the combined total number of completed interviews, terminated interviews, and refusals to interview. (The inclusion of screen-outs in the numerator and denominator is mathematically equivalent to discounting the refusals by the estimated rate of non-eligibility among refusals.) The participation rate in Figure 5 is based on the following elements:

- 501 completed interviews;
- 14 cases not interviewed because the gender quota had been met;
- 197 refusals to be interviewed (including 128 second refusals).

Based on the standard calculations of participation rate, the participation rate for Wave 2 (December 2002) was 73.5%.

FIGURE 5
FINAL SAMPLE DISPOSITION: UTAH, NOVEMBER AND DECEMBER 2002

UTAH 2002	November		December	
	Total	*Group%*	**Total**	*Group%*
TOTAL NUMBERS DIALED	**4038**		**3379**	
BAD NUMBERS (out of frame)	**2259**	**100.0%**	**1925**	**100.0%**
BUSINESS/GOV'T #/NON-RESIDENT	259	11.5%	210	10.9%
Cell Phone	1	0.0%	2	0.1%
Fax/Modem Number/Computer Tone	228	10.1%	219	11.4%
Incomplete Call/Line Problems (Temporary)	11	0.5%	4	0.2%
Not In Service / Disconnected	1760	77.9%	1490	10.3%
TOTAL GOOD NUMBERS (total sample frame)	**1779**		**1454**	
NO CONTACT	187		116	
Live Non-Contacts	**187**	**100.0%**	**116**	**100.0%**
Busy	11	5.9%	0	0.0%
No answer	86	46.0%	2	0.0%
Live Non Contacts - OVER MAX (max set to 5)	90	48.1%	114	98.3%
TOTAL CONTACTS	**1592**		**1338**	
CONTACTS - NOT SCREENED	1063		800	
Dead - Not Screened	**23**	**100.0%**	**14**	**100.0%**
Away for duration	0	0.0%	4	28.6%
CHILD/TEEN PHONE	5	21.7%	1	7.1%
Foreign Language - NON-SPANISH	5	21.7%	1	7.1%
Health Problems - LONG TERM	7	30.4%	5	35.7%
Hearing Problems	6	26.1%	3	21.4%
Live - Not Screened	**169**	**100.0%**	**131**	**100.0%**
Answering Machine/Voice Mail	57	33.7%	0	0.0%
Callback - CALL BLOCKING	12	7.1%	1	0.8%
Live Not Screened - OVER MAX (max set to 5)	100	59.2%	130	99.2%
Callback - Not Screened	**673**	**100.0%**	**473**	**100.0%**
Callback - APPOINTMENTS	341	50.7%	113	23.9%
Callback - UNSPECIFIED	161	23.9%	162	34.2%
A QUALIFIED RESP CALLBACK	32	4.8%	10	2.1%
B QUALIFIED RESP CALLBACK	4	0.6%	0	0.0%
HUNG-UP	30	4.5%	24	5.1%
Health Problems - SHORT TERM	6	0.9%	1	0.2%
Foreign Language - SPANISH	44	6.5%	31	6.6%
Callbacks Not Screened - OVER MAX (max set to 8)	55	8.2%	132	27.9%
Refusals - Not Screened	**198**	**100.0%**	**182**	**100.0%**
Refusal - CALL BLOCKING	78	39.4%	28	15.4%
Refusal - SOFT	51	25.8%	3	1.6%
Refusal - HARD (Do Not Callback)	50	25.3%	128	70.3%
Q.A. RESP REFUSAL	9	0.0%	10	5.5%
Q.B. RESP REFUSAL	3	0.0%	1	0.5%
Refusals Not Screened- OVER MAX (max set to 8)	7	3.5%	12	6.6%

CONTACTS - SCREENED	529		538	
Screen-Outs	**0**	0.0%	**0**	0.0%
Quota-Outs	**1**	**100.0%**	**14**	**100.0%**
Q/O MALES	0	0.0%	0	0.0%
Q/O FEMALES	1	100.0%	14	100.0%
Qualified Refusals	**2**	**100.0%**	**4**	**100.0%**
Qualified Soft Refusal - 1	1	50.0%	1	25.0%
Qualified Hard Refusal - 1	1	50.0%	3	75.0%
Qualified Callbacks	**26**	**100.0%**	**19**	**100.0%**
Qualified Callback – 1	26	100.0%	16	84.2%
Qualified Callbacks - OVER MAX (max set to 8)	0	0.0%	3	15.8%
Total Completes	**500**	**100.0%**	**501**	**100.0%**
Cooperation Rate	71.5%		73.5%	

Sample Weighting

The characteristics of a perfectly drawn sample of a population will vary from true population characteristics only within certain limits of sample variability (i.e., sampling error). Unfortunately, social surveys do not permit perfect samples. The sampling frames available to survey research are less than perfect. The absence of perfect cooperation from sampled units means that the completed sample will differ from the drawn sample. In order to correct these known problems of sample bias, the achieved sample is weighted to certain characteristics of the total population.

The weighting plan for the survey was a multi-stage sequential process of weighting the achieved sample to correct for sampling and non-sampling biases in the final sample. The first step in the weighting was designed to correct the cases in the completed sample for known selection biases in the sampling procedures. At the household selection stage, a random digit dialing process will give households with more than one telephone number an unequal likelihood of selection. Nationally, about ten percent of households selected by random digit dialing will have more than one telephone number. This selection bias was corrected by giving each household a first stage weight of 0.5 if there were two or more different telephone numbers in the household.

The second step in the weighting process was to correct for selection procedures that yielded unequal probability of selection within sampled households. Although the survey was designed as a population survey, only one eligible person per household could be interviewed (because multiple interviews per household are burdensome and introduce additional design effects into the survey estimates). A respondent's probability for selection is inverse to the size (number of other eligible adults) of the household. Hence, the second stage weight was equal to the number of eligible respondents within the household.

The previous steps in the sample weighting process were designed to correct the achieved sample for known biases in sample selection. There is also a self-selection bias in sample surveys in which participation is voluntary. The primary self-selection biases involve age, gender, and race. A third procedure weighted the sample to the cell distribution of the population by age and gender, using the Census Population Projections for Age and Sex for 2002 (available at www.census.gov). After these corrections were made, no further weighting by other Census characteristics was considered necessary or desirable.

The final step in the weighting process was designed to correct for the fact that the total number of cases in the weighted sample was larger than the unweighted sample size because of the use of the number of eligibles weight. In order to avoid misinterpretation of sample size, the total number of cases in the unweighted sample was divided by the total number of cases in the weighted sample to yield a sample size weight. The weight adjusts the completed interviews in the achieved sample to correct for known sampling and participation biases.

FIGURE 6
WEIGHTING DESIGN

	UTAH
A. Adjusted population by region/state	Pop. by age and sex of state
1. Number of Telephone Lines in Household	Weight1
2. Number of Adults in Household	Weight2
3. Pooled Weights 1 and 2	Weight3
4. Gender By Age	WgtUT4
5. Pooled Weight 3 and 4	WgtUT5
6. Final Adjusted Weight	**WgtUT6**

FIGURE 7
SPSS PROGRAM FOR ASSIGNING WEIGHTS-
Utah, November 2002

```
*WEIGHTS FOR NUMBER TELPHONE LINES IN HOUSEHOLD, NUMBER OF ADULTS IN
HOUSEHOLD.
compute numtel=q40.
recode numtel (sysmis=1)(2  thru 12=2).
compute nadults=q34.
recode nadults (7 thru 97=7)(98,99=1).
compute weight1=numtel.
recode weight1 (1=1)(2=.5).
compute weight2=nadults.
compute weight3=1.
compute weight3=(weight1 * weight2).
compute catage=q33.
recode catage (16 thru 24=1)(25 thru 34=2)(35 thru 44=3)(45 thru 54=4)(55 thru 64=5)(65
THRU 97=6)(98,99=7).

*WEIGHTS FOR UTAH CROSS-SECTION NOV   N=500.
do if vers=1.
compute wgtUT4=1.
if (Q41 eq 1 and catage eq 1) wgtUT4=1.090.
if (Q41 eq 1 and catage eq 2) wgtUT4=0.882.
if (Q41 eq 1 and catage eq 3) wgtUT4=0.828.
if (Q41 eq 1 and catage eq 4) wgtUT4=0.890.
if (Q41 eq 1 and catage eq 5) wgtUT4=1.355.
if (Q41 eq 1 and catage eq 6) wgtUT4=1.460.
if (Q41 eq 2 and catage eq 1) wgtUT4=1.062.
if (Q41 eq 2 and catage eq 2) wgtUT4=0.952.
if (Q41 eq 2 and catage eq 3) wgtUT4=0.885.
if (Q41 eq 2 and catage eq 4) wgtUT4=0.803.
if (Q41 eq 2 and catage eq 5) wgtUT4=1.630.
if (Q41 eq 2 and catage eq 6) wgtUT4=1.197.
compute wgtUT5=(weight3 * wgtUT4).
WEIGHT BY wgtUT5.
end if.
freq q41.

do if vers=1.
compute wgtUT6=(wgtUT5*.4770992).
WEIGHT BY wgtUT6.
end if.
```

```
*WEIGHTS FOR UTAH CROSS-SECTION DEC   N=500.
do if vers=5.
compute wgtUT4=1.
if (Q41 eq 1 and catage eq 1) wgtUT4=1.160.
if (Q41 eq 1 and catage eq 2) wgtUT4=0.935.
if (Q41 eq 1 and catage eq 3) wgtUT4=1.049.
if (Q41 eq 1 and catage eq 4) wgtUT4=0.691.
if (Q41 eq 1 and catage eq 5) wgtUT4=1.342.
if (Q41 eq 1 and catage eq 6) wgtUT4=1.342.
if (Q41 eq 2 and catage eq 1) wgtUT4=1.200.
if (Q41 eq 2 and catage eq 2) wgtUT4=1.026.
if (Q41 eq 2 and catage eq 3) wgtUT4=0.822.
if (Q41 eq 2 and catage eq 4) wgtUT4=0.790.
if (Q41 eq 2 and catage eq 5) wgtUT4=0.752.
if (Q41 eq 2 and catage eq 6) wgtUT4=1.643.
compute wgtUT5=(weight3 * wgtUT4).
WEIGHT BY wgtUT5.
end if.
freq q41.

do if vers=5.
compute wgtUT6=(wgtUT5*.4975174).
WEIGHT BY wgtUT6.
end if.
```

Precision of Sample Estimates

The objective of the sampling procedures used on this study was to produce unbiased samples of the target populations. An unbiased sample shares the same properties and characteristics of the total population from which it is drawn, subject to a certain level of sampling error. This means that with a properly drawn sample we can make statements about the properties and characteristics of the total population within certain specified limits of certainty and sampling variability.

The confidence interval for sample estimates of population proportions, using simple random sampling without replacement, is calculated by the following formula:

$$\text{var}(x) = z \Big/ [(p*q)/(n-1)]$$

Where:

var (x)	=	the expected sampling error of the mean of some variable, expressed as a proportion
p	=	some proportion of the sample displaying a certain characteristic or attribute
q	=	(1 - p)
z	=	the standardized normal variable, given a specified confidence level (1.96 for samples of this size).
n	=	the size of the sample

The sample size for the survey is large enough to permit estimates for subsamples of particular interest. Figure 8, on the next page, presents the expected size of the sampling error for specified sample sizes of 1,200 and less, at different response distributions on a categorical variable. As the figure shows, larger samples produce smaller expected sampling variances, but there is a constantly declining marginal utility of variance reduction per sample size increase.

FIGURE 8
EXPECTED SAMPLING ERROR (Plus or Minus)
AT THE 95% CONFIDENCE LEVEL
(Simple Random Sample)

Size of Sample or Subsample	Percentage of the Sample or Subsample Giving A Certain Response or Displaying a Certain Characteristic for Percentages Near: 10 or 90	20 or 80	30 or 70	40 or 60	50
1,200	1.7	2.3	2.6	2.8	2.8
1,000	1.9	2.5	2.8	3.0	3.1
900	2.0	2.6	3.0	3.2	3.3
800	2.1	2.8	3.2	3.4	3.5
700	2.2	3.0	3.4	3.6	3.7
600	2.4	3.2	3.7	3.9	4.0
500	2.6	3.5	4.0	4.3	4.4
400	2.9	3.9	4.5	4.8	4.9
300	3.4	4.5	5.2	5.6	5.7
200	4.2	5.6	6.4	6.8	6.9
150	4.8	6.4	7.4	7.9	8.0
100	5.9	7.9	9.0	9.7	9.8
75	6.8	9.1	10.4	11.2	11.4
50	8.4	11.2	12.8	13.7	14.0

NOTE: Entries are expressed as percentage points (+ or -).

We would expect relatively little difference in sample estimates between a simple random sample and a stratified proportionate sample. However, the appropriate statistical formula for calculating the allowance for sampling error (at a 95% confidence interval) for this type of stratified sample is:

$$ASE = 1.96 \sqrt{\frac{g}{3 \left[W_h^2 \{(1-f_h)(s^2_h/n_h - 1)\}\right]}} \over h^{1-g}$$

where:

ASE	=	allowance for sampling error at the 95% confidence level;
h	=	a sample stratum;
g	=	number of sample strata;
W_h	=	stratum h as a proportion of total population;
f_h	=	the sampling fraction for group h -- the number in the sample divided by the number in the universe;
s^2_h	=	the variance in the stratum h -- for proportions this is equal to p_h (1.0 - p_h);
n_h	=	the sample size for the stratum h.

While the earlier figure provides a useful approximation of the magnitude of expected sampling error, precise calculation of allowances for sampling error requires the use of this formula.

Estimating Statistical Significance

The estimates of sampling precision presented in the previous section yield confidence bands around the sample estimates, within which the true population value should lie. This type of sampling estimate is appropriate when the goal of the research is to estimate a population distribution parameter. However, the purpose of some surveys is to provide a comparison of population parameters estimated from independent samples (e.g. annual tracking surveys) or between subsets of the same sample. In such instances, the question is not simply whether or not there is any difference in the sample statistics that estimate the population parameter, but rather is the difference between the sample estimates statistically significant (i.e., beyond the expected limits of sampling error for both sample estimates).

To test whether or not a difference between two sample proportions is statistically significant, a rather simple calculation can be made. Call the total sampling error (i.e., var (x) in the previous formula) of the first sample s1 and the total sampling error of the second sample s2. Then, the sampling error of the difference between these estimates is sd which is calculated as:

$$sd = \sqrt{(s1^2 + s2^2)}$$

Any difference between observed proportions that exceeds sd is a statistically significant difference at the specified confidence interval. Note that this technique is mathematically equivalent to generating standardized tests of the difference between proportions.

An illustration of the pooled sampling error between subsamples for various sizes is presented in Figure 9. This figure can be used to indicate the size of difference in proportions between drivers and non-drivers or other subsamples that would be statistically significant.

FIGURE 9
POOLED SAMPLING ERROR EXPRESSED AS PERCENTAGES FOR GIVEN SAMPLE SIZES (Assuming P=Q)

Sample Size	(Expressed in Percents)									
1000	10.3	7.6	6.5	5.8	5.4	5.1	4.8	4.7	4.5	4.4
900	10.4	7.7	6.5	5.9	5.5	5.2	4.9	4.8	4.6	
800	10.4	7.8	6.6	6.0	5.6	5.3	5.1	4.9		
700	10.5	7.9	6.8	6.1	5.7	5.5	5.2			
600	10.6	8.0	6.9	6.3	5.9	5.7				
500	10.8	8.2	7.2	6.6	6.2					
400	11.0	8.5	7.5	6.9						
300	11.4	9.0	8.0							
200	12.1	9.8								
100	13.9									
	100	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**	**1000**
Sample Size										

Study #9727n
OMB Number:2127-0615
Expiration Date: 12/31/04
Final Approved: 11/06/2002

BUCKLE UP AMERICA SURVEYS (Utah Nov 2002)

State: _____ County: _____ Metro Status: _____

Date: _____ CATI ID: _____

Interviewer:_____

Telephone Number: _____

Time Start: _____ Time End: _____ TOTAL TIME: _____

_____

INTRODUCTION
Hello, I'm _____ calling for the U.S. Department of Transportation. We are conducting a study of Americans' driving habits and attitudes. The interview is voluntary and completely confidential. It only takes about10 minutes to complete. *[Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this information collection is 2127-0615.]*

DUMMY QUESTION FOR BIRTHDAY QUESTIONS
Has had the most recent.....1
Will have the next.....2

A. In order to select just one person to interview, could I speak to the person in your household, 16 or older, who (has had the most recent/will have the next) birthday?

Respondent is the person.....1	**SKIP TO Q1**
Other respondent comes to phone.....2	
Respondent is not available.....3	**ARRANGE CALLBACK**
Refused.....4	

B. Hello, I'm _____ calling for the U.S. Department of Transportation. We are conducting a study of Americans' driving habits and attitudes. The interview is voluntary and completely confidential. It only takes about10 minutes to complete. [Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this information collection is 2127-0615]. Could we begin now?

CONTINUE INTERVIEW.....1
Arrange Callback…….....2
Refused.....3

Note: Text in brackets is not read, but available if asked.

Q.1 How often do you drive a motor vehicle? Almost every day, a few days a week, a few days a month, a few days a year, or do you never drive?

Almost every day.....1
Few days a week.....2
Few days a month.....3
Few days a year.....4
Never.....5 **SKIP TO Q9**
Other (SPECIFY) 6
(VOL) Don't know.....7
(VOL) Refused.....8

Q.2 Is the vehicle you drive most often a car, van, motorcycle, sport utility vehicle, pickup truck, or other type of truck? (NOTE: IF RESPONDENT DRIVES MORE THAN ONE VEHICLE OFTEN, ASK:) "What kind of vehicle did you LAST drive?"

Car.....1
Van or minivan.....2
Motorcycle.....3 **SKIP TO Q9**
Pickup truck.....4
Sport Utility Vehicle.....5
Other.....10
Other truck (SPECIFY)....11
(VOL) Don't know.....12
(VOL) Refused.....13

Q.3 For the next series of questions, please answer only for the (car/truck/van) you said you usually drive. Do the seat belts in the front seat of the (car/truck/van) go across your shoulder only, across your lap only, or across both your shoulder and lap?

INTERVIEWER INSTRUCTION: SEATBELT QUESTIONS REFER TO DRIVER SIDE BELTS.

Across shoulder.....1
Across lap.....2 **SKIP TO Q5**
Across both.....3
Vehicle has no belts.....4 **SKIP TO Q9**
(VOL) Don't know.....5 **SKIP TO Q6**
(VOL) Refused.....6 **SKIP TO Q6**

Q.4 When driving this (car/truck/van), how often do you wear your shoulder belt... (READ LIST)

ALL OF THE TIME.....1
MOST OF THE TIME.....2
SOME OF THE TIME.....3
RARELY OR.....4
NEVER.....5
(VOL) Don't know.....6
(VOL) Refused.....7

IF Q3=1 SKIP TO Q6

Q.5 When driving this (car/truck/van), how often do you wear your lap belt...(READ LIST)

ALL OF THE TIME.....1
MOST OF THE TIME.....2
SOME OF THE TIME.....3
RARELY OR.....4
NEVER.....5
(VOL) Don't know.....6
(VOL) Refused.....7

Q.6 When was the last time you did NOT wear your seat belt when driving?

Within the past day.....1
Within the past week.....2
Within the past month.....3
Within the past year.....4
A year or more ago/I always wear it.....5
(VOL) Don't know.....6
(VOL) Refused.....7

Q.7 In the past 30 days, has your use of seat belts when driving (vehicle driven most often) increased, decreased, or stayed the same?

Increased.....1
Decreased.....2 **SKIP TO Q9**
Stayed the same.....3 **SKIP TO Q9**
New driver.....4 **SKIP TO Q9**
(VOL) Don't know.....5 **SKIP TO Q9**
(VOL) Refused.....6 **SKIP TO Q9**

Q.8 What caused your use of seat belts to increase?
(DO NOT READ LIST - MULTIPLE RECORD)

Increased awareness of safety.....1
Seat belt law.....2
Don't want to get a ticket.....3
Was in a crash.....4
New car with automatic belt.....5
Influence/pressure from others.....6
More long distance driving.....7
Remember more/more in the habit.....8
The weather.....9
The holidays.....10
Driving faster.....11
Other (SPECIFY____).....27
(VOL) Don't know.....28
(VOL) Refused.....29

Q.9 Does (RESP'S STATE) have a law requiring seat belt use by adults?

Yes.....1
No.....2 **SKIP TO Q12**
(VOL) Don't know.....3 **SKIP TO Q12**
(VOL) Refused.....4 **SKIP TO Q12**

IF Q1=5 AND Q9=1, SKIP TO Q11
If Q2 = 3 AND Q9 = 1, SKIP TO Q11

Q.10 Assume that you do not use your seat belt AT ALL while driving over the next six months. How likely do you think you will be to receive a ticket for not wearing a seat belt? READ

Very likely.....1
Somewhat likely.....2
Somewhat unlikely.....3
Very unlikely.....4
(VOL) Don't know.....5
(VOL) Refused.....6

Q.11 According to your state law, can police stop a vehicle if they observe a seat belt violation or do they have to observe some other offense first in order to stop the vehicle?

Can stop just for seat belt violation.....1
Must observe another offense first.....2
(VOL) Don't know.....3
(VOL) Refused.....4

Q.12 In your opinion, SHOULD police be allowed to stop a vehicle if they observe a seat belt violation when no other traffic laws are being broken?

Should be allowed to stop.....1
Should not.....2
(VOL) Don't know.....3
(VOL) Refused.....4

Q.13 Please tell me whether you strongly agree, somewhat agree, somewhat disagree or strongly disagree with the following statements?
ROTATE

a) Seat belts are just as likely to harm you as help you.

b) If I was in an accident, I would want to have my seat belt on.

c) Police in my community generally will not bother to write tickets for seat belt violations.

d) It is important for police to enforce the seat belt laws.

e) Putting on a seat belt makes me worry more about being in an accident.

f) Police in my community are writing more seat belt tickets now than they were a few months ago.

Q.14 Yes or No--in the past 30 days, have you seen or heard of any special effort by police to ticket drivers in your community for seat belt violations?

Yes.....1	
No.....2	**SKIP TO Q24**
(Vol) Don't know...3	**SKIP TO Q24**
(Vol) Refused.....4	**SKIP TO Q24**

Q.15 Where did you see or hear about that special effort?
[DO NOT READ--MULTIPLE RESPONSE]

TV.....1	
Radio.....2	
Friend/Relative.....3	**SKIP TO Q24**
Newspaper.....4	**SKIP TO Q24**
Personal observation/on the road....5	**SKIP TO Q24**
Billboard/signs.....7	**SKIP TO Q24**
I'm a police officer/judge.....9	**SKIP TO Q24**
Other (specify_____)..... 17	**SKIP TO Q24**
Don't know.....18	**SKIP TO Q24**
Refused.....19	**SKIP TO Q24**

Q.16 Was the (tv/radio) message a commercial (or advertisement), was it part of a news program, or was it something else? **MULTIPLE RECORD**

Commercial/Advertisement/ Public Service Announcement.....1
News story/news program.....2
Something else (specify): _____.....3
Don't know.....4
Refused.....5

NO QUESTIONS 17-23

ASK EVERYONE

Q24 In the past 30 days, have you seen or heard of any special effort by police to ticket drivers in your community if children in their vehicles are not wearing seat belts or are not in car seats?

Yes.....1
No.....2
Don't know.....3
Refused.....4

Q25 Now, I would like to ask you a few questions about educational or other types of activities? In the past 30 days, have you seen or heard any messages that encourage people to wear their seat belts. This could be public service announcements on TV, messages on the radio, signs on the road, news stories, or something else.

Yes.....1	
No.....2	**SKIP TO Q29**
Don't know.....3	**SKIP TO Q29**
Refused.....4	**SKIP TO Q29**

Q.26 Where did you see or hear these messages?
[DO NOT READ--MULTIPLE RESPONSE]

TV.....1	
Radio.....2	
Friend/Relative.....3	**SKIP TO Q28**
Newspaper.....4	**SKIP TO Q28**
Personal observation/on the road....5	**SKIP TO Q28**
Billboard/signs.....7	**SKIP TO Q28**
I'm a police officer/judge.....9	**SKIP TO Q28**
Other (specify_____)..... 17	**SKIP TO Q28**
Don't know.....18	**SKIP TO Q28**
Refused.....19	**SKIP TO Q28**

Q 27 Was the (tv/radio) message a commercial (or advertisement), was it part of a news program, or was it something else? **MULTIPLE RECORD**

Commercial/Advertisement/
Public Service Announcement.....1
News story/news program.....2
Something else (specify): _____.....3
Don't know.....4
Refused.....5

Q.28 Would you say that the number of these messages you have seen or heard in the past 30 days is more than usual, fewer than usual, or about the same as usual?

More than usual.....1
Fewer than usual.....2
About the same.....3
Don't know.....4
Refused.....5

Q.29 Are there any advertisements or activities that you have seen or heard in the past 30 days that encouraged adults to make sure that children use car seats or seat belts?

Yes.....1
No.....2 **SKIP TO Q31**
Don't know.....3 **SKIP TO Q31**
Refused.....4 **SKIP TO Q31**

Q30 What did you see or hear?

_____

Q31 Thinking about everything you have heard, how important do you think it is for [respondent's STATE] to enforce seat belt laws for ADULTS more strictly . . . . very important, fairly important, just somewhat important, or not that important?

Very important.....1
Fairly important.....2
Just somewhat important.....3
Not that important.....4
Don't know.....5
Refused.....6

Q32 Do you recall hearing or seeing the following slogans in the past 30 days? **READ LIST AND MULTIPLE RECORD**

ROTATE PUNCHES 1-?
Friends don't let friends drive drunk.....1
Click it or ticket.....2
Buckle Up America.....3
Children In Back.....4
You drink, you drive, you lose.....5
Didn't see it coming? No one ever does.....6
Get the keys.....7
Please Buckle Up (Ohio).....8
What's Holding You Back (Ohio).....9
Operation Pullover (Indiana)
Buckle Up Always (Michigan)
Why Risk It (Nevada)
No, Exceptions, No Excuses, Buckle Up Now (Nevada)
Click It Or Ticket: (State Name)
Buckle Up (State Name)
Buckling Up Makes Good Sense for Kids (Colorado)
Buckle Up It's the Law and It's Enforced (Connecticut)
Show a Little Restraint (Iowa)
Kansas Clicks (Kansas)
Buckle Up or Pay the Price (Minnesota)
Click It Don't Risk It (Missouri)
Click It Don't Risk It (Nebraska)
Life Is Good. The Way to Go (Oregon).
Fasten for Life (South Carolina)
Buckled or Busted (Utah)
Click It Why Risk It (Wisconsin)
No Excuses, Buckle Up (Wyoming)
None of these.....
Don't know.....88
Refused.....99

_____

Q.33 Now, I need to ask you some basic information about you and your household. What is your age?

_____ AGE REFUSED=99

Q.34 Including yourself, how many persons, age 16 or older, are living in your household at least half of the time or consider it their primary residence?

_____ REFUSED=99

Q35 How many children age 15 or younger are living in your household at least half of the time or consider it their primary residence?

_____ NONE=0 REFUSED=99

Q.36 Do you consider yourself to be Hispanic or Latino?

Yes.....1
No.....2
(VOL) Not sure.....3
(VOL) Refused.....4

Q.37 Which of the following racial categories describes you? You may select more than one. **[READ LIST--MULTIPLE RECORD]**

American Indian or Alaskan Native.....1
Asian.....2
Black or African American.....3
Native Hawaiian or other Pacific Islander.....4
White.....5
Other(SPECIFY).....6
_____
(VOL) Refused.....9

Q.38 What is the highest grade or year of school you completed?

8th grade or less.....9
9th grade.....10
10th grade.....11
11th grade.....12
12th grade/GED.....13
Some college.....14
College graduate or higher….15
(VOL) Refused.....16

Q.39 Do you have more than one telephone number in your household?

Yes.....1
No.....2 **SKIP TO Q41**
Don't know.....3 **SKIP TO Q41**
(VOL) Refused.....4 **SKIP TO Q41**

Q.40 Not including cells phones, and phones used primarily for fax or computer lines, how many different telephone numbers do you have in your household-?

_____ 10 OR MORE=10 DON'T KNOW=11 REFUSED=12

Q.41 **FROM OBSERVATION, ENTER SEX OF RESPONDENT**

Male.....1
Female.....2

That completes the survey.

Thank you very much for your time and cooperation.